

WHAT IS CLAIMED IS:

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1. A prefabricated composite panel comprising:

a frame including a plurality of spaced apart frame members having at

5 least one flange;

a reinforcing layer fastened to said flange of at least one of said frame members; and

a concrete slab having a density of 400 to 1760 kg/m³ (25 to 110 pcf), wherein said concrete slab has a front face and a rear face, wherein said reinforcing layer and said flange are embedded in said slab, and another portion of said frame protrudes from said rear face of said slab.

2. The prefabricated composite panel of claim 1 wherein the concrete slab is aerated concrete.

3. The prefabricated composite panel of claim 1 wherein said elongated frame members are C-channel members comprising a web connected to said at least one flange and a second flange connected to the web spaced from said one flange.

4. The prefabricated composite panel of claim 1 wherein said at least one flange includes at least one tab and tab-opening, said concrete slab extending through said tab-opening.

5. The prefabricated composite panel of claim 1 wherein the reinforcing layer includes a slit and expanded metal lath.

6. The prefabricated composite panel of claim 1 further comprising at least one opening in the panel which is partially bounded by said frame members.

7. The prefabricated composite panel of claim 1 further comprising at least one outer member removably attached to said frame and bounding at least one edge of the panel.

5 8. The prefabricated composite panel of claim 1 further comprising at least one outer member permanently attached to said frame and bounding at least one edge of the panel.

10 9. A prefabricated composite panel comprising:
a concrete slab;
a frame including a plurality of spaced apart frame members having at least one flange, wherein said flange is embedded in said concrete slab; and
at least one opening disposed on said embedded flange, said concrete slab extending through said opening.

15 10. The prefabricated composite panel of claim 9 further comprising a tab adjacent said opening, said tab being embedded in concrete.

20 11. The prefabricated composite panel of claim 9 wherein said frame members are C-channel members comprising a web connected to said at least one flange and a second flange connected to the web spaced from said one flange.

25 12. The prefabricated composite panel of claim 10 wherein said tab is disposed on a flange and has an angled orientation with respect to said flange.

13. The prefabricated composite panel of claim 9 further comprising a reinforcing layer attached to said frame members.

30 14. The prefabricated composite panel of claim 9 further including an opening in the panel.

15. The prefabricated composite panel of claim 9 further comprising at least one outer member removably attached to said frame and bounding at least one edge of the panel.

16. The prefabricated composite panel of claim 9 wherein said concrete slab is aerated concrete having a density of between 400 to 1760 kg/m³ (25 to 110 pounds per cubic foot).

17. A prefabricated composite panel formed on a pouring pad comprising:

a frame including a plurality of spaced apart frame members;
a concrete slab having a front face and a rear face,
an embedded portion of said frame embedded in said slab and an exposed portion of said frame protruding from said rear face; and
at least one outer member having a first portion removably fastened to said frame and a second portion configured to sealingly engage the pouring pad and retain the concrete within an area bounded by said outer member, said outer member being removable after the concrete cures.

18. The composite panel of claim 17 wherein said at least one outer member bounds at least one edge of the panel.

19. The composite panel of claim 17 wherein said at least one outer member bounds the entire panel.

20. The composite panel of claim 17 wherein said at least one outer member is fastened to said frame by snapping or pressure fitting against said frame.

21. A method of fabricating a composite building panel from concrete and a frame, the method comprising the steps of:

attaching at least one outer member to the frame such that said outer member is oriented upside down;

flipping the frame and said attached outer member over generally 180-degrees such that said outer member is oriented right side up;

5 placing said outer member on a pouring pad, the frame being spaced above the pad by the outer member;

depositing a concrete slurry onto said pouring pad to a depth such that a portion of the frame is embedded in the concrete;

10 retaining the concrete within the frame at least partially with said outer member; and
curing the concrete.

22. The method of claim 20 further comprising the step of removing the composite panel from said pouring pad with the outer member attached to the
15 frame.

23. The method of claim 20 further comprising the step of attaching a reinforcing layer to the portion of the frame that is to be embedded in concrete prior to depositing the concrete.

20 24. A combination of prefabricated composite panels, comprising:
two adjacent composite panels, each panel having a front face and a rear face, each panel having a frame member at an edge of the panel opposing the other said panel;

25 insulating material sandwiched between said opposing frame members;
a plurality of fasteners fastening said opposing frame members together
with said insulating material sandwiched between said frame members; and
a seal between said adjacent panels at the front face of said panel.